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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,643

07/19/2005

Toshinori Takatsuka

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EXAMINER

SHEETS, ELIJAH M

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/542,643	<b>Applicant(s)</b> TAKATSUKA, TOSHINORI	
	<b>Examiner</b> ELIJAH M. SHEETS	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-18, 27-32, 36, 39-42, 45 and 48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-21, 23-26, 33-35, 37, 38 43, 44 46, 47 49 and 50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/19/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Acknowledgement of Applicant's Amendments*

1. Examiner acknowledges applicant's amendments to the claims and the remarks concerning these newly amended claims in applicant's Request for Continued Examination. These claims and remarks are treated herein.

### *Claim Objections*

2. Claim 26 is objected to for the following minor informality: the claim states "said ring-like magnet magnetized." A magnet being magnetized is inherent to the magnet, so the phrase "magnet magnetized" is redundant and unnecessary. This should be amended to "said ring-like magnet".

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: (*See MPEP Ch. 2141*)

- a. Determining the scope and contents of the prior art;
- b. Ascertaining the differences between the prior art and the claims in issue;
- c. Resolving the level of ordinary skill in the pertinent art; and

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*d.* Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

4. Claims 19 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet (Patent No. US 6762748).

As to claims 19 and 50, Maattaet discloses a pointing device comprising: a ring-like magnet that is movably supported in parallel to a plane, and is internally and externally magnetized in the direction of its radius of said ring-like magnet (see fig.3a, and fig. 3b); and a plurality of magnetic sensors for detecting magnetic flux density produced by said ring-like magnet in a direction parallel to the plane are placed outside or inside said ring-like magnet, wherein said magnetic sensors are disposed symmetrically from each other to said ring-like magnet (fig.3a(323, 321)), said magnetic sensors detect variations in the magnetic flux density (inherent to Hall sensors) in the direction parallel to the plane, the variations being caused by movement in a direction parallel to the plane of said ring-like magnet (fig.3a).

However, Maataet does not specifically teach that the magnet includes two or more sets of north-south magnetic poles. This implementation, however, would have been obvious to one of ordinary skill in the art at the time of invention in view of Maateat, as this is a duplication of north-south poles seen, for example, in Figs. 3a – 5b. The duplication of these poles (no matter how many sets of M north-south poles or sensors), although adding a limitation, would have simply been a matter of design choice, and is therefore obvious over Maateat (See *St. Regis Paper Co. vs. Bemis Co., Inc.*, 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977)).

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5. Claims 20-21,23-26,33-35,37,38,43,44,46,47, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet in view of Arita et al (Patent No. US 5,504,502, hereinafter referred to as Arita).

As to claim 20, although not disclosed in Maattaet, Arita discloses a pointing device comprising: ring-like magnet is internally and externally unipolarly magnetized (see.fig.9A, col.6 lines 5-20).

Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to incorporate the internally and externally unipolarly magnetized magnets of Arita into the input device of Maattaet, for the benefit of low power consumption and simple construction (Col. 6, lines 22-25)

As to claim 21, Arita discloses the pointing device as claimed in claim 19, further comprising a printed circuit board on which a resin layer with elastic deformation is provided, wherein said ring-like magnet is fixed to said resin layer, and said ring-like magnet is movably supported in parallel to said printed circuit board, magnetic sensors are placed on said printed circuit board (fig.1 (14), col.4 lines 47-50).

As to claim 23, Arita discloses the pointing device as claimed in claim 19, wherein said magnetic sensors are magnetic sensors utilizing Hall effect, and the output signals are proportional to the magnetic flux density (fig.9A (18), col.6 lines 15-20; it is apparent that the magnet consists of this hall effect phenomenon, since a Hall effect refers to the potential difference (Hall voltage) on the opposite sides of an electrical conductor through which an electric current is flowing, created by a magnetic field applied perpendicular to the current; which is a magnetic characteristic as applied in the

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indicated figure).

As to claim 24, Arita discloses the pointing device as claimed in claim 19, wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect (fig.11; the application of magnet reduces the resistance of the material to the applied force, and the circuit may be able to use as a sensor).

As to claim 25, Arita discloses the pointing device as claimed in claim 19, further comprising an origin returning means for returning said ring-like magnet to the origin using magnetic force generated by said ring-like magnet (fig.28 (61), col.10 lines 25-33).

As to claim 26, Arita discloses the pointing device as claimed in claim 19, wherein said magnetic sensors are disposed and faced to a magnetic pole center of said ring-like magnet magnetized (fig.8A (14, 18) fig. 9A (14), col. 6 lines10-20).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the magnetic sensor of Arita in Ito et al system because it would allow us to determine the magnetic directions.

As to claim 33, Arita discloses the pointing device as claimed in claim 21, wherein said resin layer and said printed circuit board have their opposing faces not bonded to each other (fig. 9A (18)), col.7 lines 36-38).

As to claim 34, Arita discloses the pointing device as claimed in claim 21, wherein said resin layer is an elastic sheet (fig.1 (11 ), col.4 lines 51-53).

As to claim 35, Arita discloses the pointing device as claimed in claim 21, wherein said resin layer is a silicone resin (col. 4, lines 51-55; since resin layer is characterized by being elastic sheet, it is very useful in pressure sensitive adhesives, silicone rubbers, coatings and additives)

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As to claim 37, Arita discloses the pointing device as claimed in claim 21, further comprising a switch on the resin layer side of said printed circuit board and at about the center of said ring-like magnet (fig.19 (15), col.8 lines 38-43)

As to claim 38, Arita discloses the pointing device as claimed in claim 37, further comprising a projection for depressing said switch at a portion facing said switch on said resin layer (fig.20A, col.8 lines 64-68).

As to claim 43, Arita discloses the pointing device as claimed in claim 23, wherein said magnetic sensors utilizing the Hall effect are disposed on the resin layer side of said printed circuit board to detect the magnetic flux density in a direction parallel to the surface of said printed circuit board (fig.29, (14-1, 14-2). Fig.10 (17)).

As to claim 44, Arita discloses the pointing device as claimed in claim 23, wherein said magnetic sensors utilizing the Hall effect are magnetic sensors with a single output terminal.

As to claim 46, Arita discloses the pointing device as claimed in claim 24, wherein said magnetic sensors utilizing the magneto-resistive effect are semiconductor magneto-resistive elements which are disposed on the resin layer side of said printed circuit board to detect the magnetic flux density in a direction parallel to the surface of said printed circuit board ((fig.29, (14-1, 14-2). fig.30 Fig.10 (17)).

As to claim 47, Arita discloses the pointing device as claimed in claim 24, wherein said magnetic sensors utilizing the magneto-resistive effect are four semiconductor magneto-resistive elements disposed symmetrically on X and Y axes, which are two axes on a two dimensional plane of an orthogonal system, wherein two magnetic sensors on the X axis are electrically connected at a first connection point; and two magnetic sensors

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on the Y axis are electrically connected at a second connection point, and wherein said pointing device detects variations in ambient magnetic flux density caused by movement of said ring-like magnet using electric signals at the first and second connection points (fig.8A, fig.8B) col.5 lines 40-50).

As to claim 49, Arita discloses an electronic device incorporating the pointing device as defined in any one of claims (see fig. 1 ).

### ***Response to Applicant's Amendments***

6. Regarding applicant's argument that examiner has failed to explain why the differences between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art and that examiner does not teach "two or more sets of north-south magnetic poles": please see both the discussion of design choice on claim 19 rejection above, especially cited case law regarding duplication of parts, as well as the cited motivation to combine the references in claim 20 rejection above. These new rejections address these concerns presented by applicant. Therefore, the remarks are unpersuasive at this time, and the rejections are maintained.

### ***Contact***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eli Sheets whose telephone number is (571) 272-6532. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. Customer Service can



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be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is (571) 273-7674.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Elijah Sheets/

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629